VX5A661CN4A
05/98
Raleigh, NC, USA

ALTIVAR® 66

Addendum to 12/96 Service and Troubleshooting Manual VD0C06S701: Replacement of Power Board Kit Installation Instructions for Drive Controllers ATV66C10N4 to C19N4

Anexo para el Manual de servicio y localización de averías VD0C06S701 de fecha 12/96: Instrucciones de instalación para la sustitución del accesorio de la tarjeta de potencia para los variadores de velocidad ATV66C10N4 a C19N4

Annexe du manuel d'entretien et de dépannage VD0C06S701 de Déc. 1996 : Remplacement des directives d'installation du kit de cartes de puissance pour les variateurs de vitesse ATV66C10N4 à C19N4

Nachtrag zum 12/96 "Service and Troubleshooting Manual" VD0C06S701: Austausch der Leistungsplatte bei Frequenzwandlern ATV66C10N4 bis C19N4.

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DEUTSCH

The VD0C06S701 and VD0C06T306 manuals referenced in this addendum are available only in North America. For users in other countries, please contact your local sales office for additional information, including the address of the nearest Groupe Schneider Service Office.

Los manuales VD0C06S701 y VD0C06T306 a que se hace referencia en este anexo están disponibles solamente en América del Norte. Los usuarios de otros países deben ponerse en contacto con la oficina local de ventas para obtener información adicional en la que se incluya la dirección de la Oficina de Servicios de Groupe Schneider más cercana.

Les manuels VD0C06S701 et VD0C06T306 référés dans cette annexe sont disponibles seulement en Amérique du Nord. Les utilisateurs d'autres pays doivent contacter le bureau local de ventes pour plus d'informations, y compris l'adresse du Bureau de Services du Groupe Schneider le plus proche.

Die Handbücher VD0C06S701 und VD0C06T306, auf die in diesem Nachtrag verwiesen wird, sind nur in Nordamerika erhältlich. Benutzer in anderen Ländern sollten sich von dem örtlichen Vertragshändler beraten lassen bzw. die Adresse der nächsten Groupe Schneider Dienststelle ausfindig machen.

⚠ DANGER

HAZARDOUS VOLTAGE

- If you cannot read and comprehend the ATV66 Service & Troubleshooting Manual, bulletin no. VD0C06S701 (12/96), which is available only in English, do not install this product.
- To have this product installed, contact your local sales office to find the nearest Groupe Schneider Service Center (Square D, Telemecanique, or Merlin Gerin).

Electric shock will result in death or serious injury.

INTRODUCTION

In the first half of 1998, manufacturing changes were made to ALTIVAR® 66 drive controller models ATV66C10N4, ATV66C13N4, ATV66C15N4, and ATV66C19N4. These changes resulted in the introduction of a new series of power boards. This addendum contains installation instructions for the new power boards. Refer to Table 1 to match the new Power Board Kit with the drive controller model.

Table 1: Power Board Kit Catalog Numbers

Drive Controller Catalog No.	New Power Board Kit Catalog No.
ATV66C10N4	VX5A661C10N4
ATV66C13N4	VX5A661C13N4
ATV66C15N4	VX5A661C15N4
ATV66C19N4	VX5A661C19N4

PROCEDURE SELECTION

This procedure is not a stand-alone document. It references important procedures included ONLY in the ATV66 Service & Troubleshooting Manual, bulletin no. VD0C06S701, dated December 1996. Be sure to read and follow the procedures found in that manual that are referred to in this addendum.

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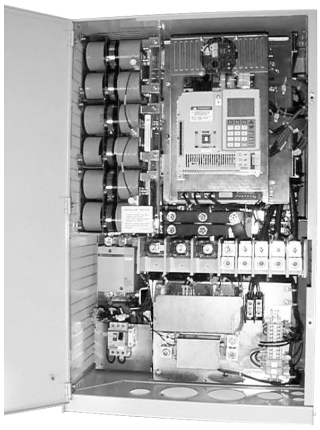
To install the power board, follow these steps:

1. Use Figures 1 and 2 to identify the version of the drive controller that will be repaired.
2. If the drive controller to be repaired matches the construction found in Figure 1, follow Procedure 1.
3. If the drive controller to be repaired matches the construction found in Figure 2, follow Procedure 2 on page 6.

For controllers like this, use Procedure 1.

Figure 1



For controllers like this, use Procedure 2 on page 6.

Figure 2

PROCEDURE 1

This procedure explains how to replace the power board for drive controllers of the type illustrated in Figure 1.

Removing the Power Board

NOTE: When removing connector plugs in this procedure, be sure to pull on the body of the plugs and not the wires.

⚠ DANGER

HAZARDOUS VOLTAGE

- Turn off all power supplying this equipment before working on it.
- Follow “PROCEDURE 1: BUS VOLTAGE MEASUREMENT” on page 310 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96).

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARDOUS VOLTAGE—SEPARATE POWER

- Separate power may be present on control basket, power board, and I/O Extension Module (if installed) connectors.
- Verify that all power has been removed from J1, J12, J13 connectors.
- If the I/O Extension Module is installed, verify that all power is removed from J22, J23, and J24 connectors.

Failure to follow these instructions will result in death or serious injury.

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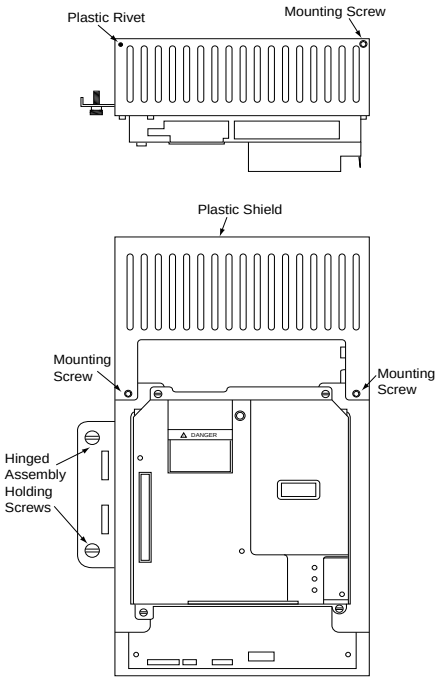

Figure 3: Front View of Hinged Assembly

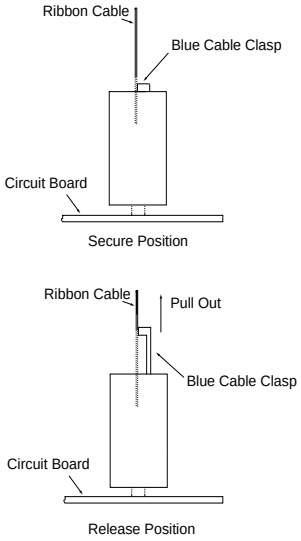

Figure 4: Cable Clasp Operation

Installing the Power Board

CAUTION

STATIC-SENSITIVE COMPONENTS

Many drive controller components may be damaged by static electricity. Follow the electrostatic precautions listed in “Static Sensitive Components” on page 4 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96), when handling drive controller circuit boards or testing components.

Failure to observe this instruction can result in equipment damage.

Read “WORK PRACTICE PRECAUTIONS” on pages 3 to 5 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96), and the precaution statement on the inside cover of that manual before performing any maintenance or troubleshooting procedure.

The tools needed for this procedure are:

- 4 in. needle-nose pliers
- The control basket procedure tool list on page 238 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96).

With the drive controller door open:

1. Remove the control basket as described in the procedure on page 237 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96).
2. Using a flat-blade screwdriver, loosen the two screws holding the hinged assembly in place. See Figure 3. Swing the hinged assembly out to the right.
3. Using a hex key wrench, remove the three plastic shield mounting screws. See Figure 3. Using the plastic rivet as a hinge, swing the plastic shield out of the way.
4. Carefully disconnect the cables attached at connector jacks J1, J2, J6, J7, J8, J10, J11, J12, J13, and J15 on the power board. See Figures 5 and 6 for connector jack locations.
5. Remove the cables attached at connector jacks J3, J4, J5, J9, and J18 (or J32). If the power board is of the series illustrated in Figure 5, refer to Figure 4 for cable clasp operation. If the board is of the series shown in Figure 6, carefully lift the gray cable clasp to its release position, then remove the cable. *For all power boards, ensure that the clasp is in the release position before removing the ribbon cables.* The cables will be reused when the new power board is installed. If they are damaged, order the replacement cable kit, catalog number VZ3N616.
6. Using a hex key wrench, loosen and remove the ground screw at the top right corner of the power board.
7. Using needle-nose pliers, unsnap the seven mounting pins and lift the power board out of the hinged assembly.

CAUTION

STATIC-SENSITIVE COMPONENTS

Many drive controller components may be damaged by static electricity. Follow the electrostatic precautions listed in “Static Sensitive Components” on page 4 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96), when handling drive controller circuit boards or testing components.

Failure to observe this instruction can result in equipment damage.

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Read “WORK PRACTICE PRECAUTIONS” on pages 3 to 5 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96), and the precaution statement on the inside cover of that manual before performing any maintenance or troubleshooting procedure.

The user needs the following tools for this procedure:

- Torque wrench, set to 17.7 lb-in (2.0 N•m)
- Metric hex key sockets for torque wrench, 2 to 14 mm
- 4 in. needle-nose pliers
- The control basket procedure tool list on page 240 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96).

NOTES TO FIGURES 5 and 6:

- *The circled areas indicate the differences between the previous and current power board series.*
- *The connector jack labeled J18 on the power board illustrated in Figure 5 is labeled J32 on the power board illustrated in Figure 6. The two connector jacks are electrically equivalent. When the power board is properly installed, they are both connected to jack J32 on the control basket.*
- *Do not install the power board illustrated in Figure 5 into the drive controller illustrated in Figure 2 on page 2.*

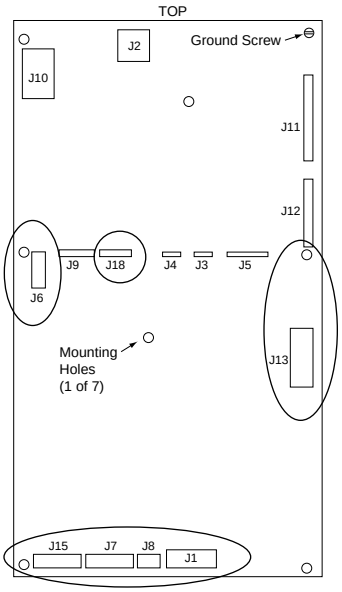

Figure 5: Previous PB Series

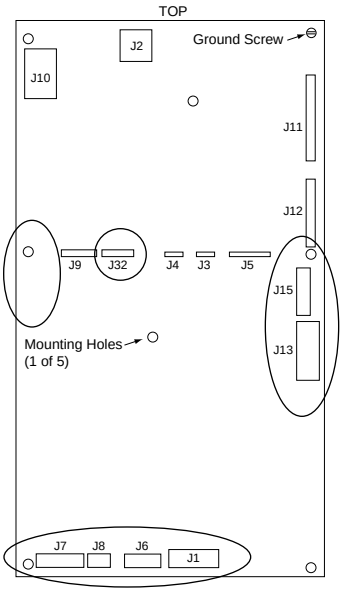

Figure 6: Current PB Series

Consult Figures 5 and 6 to determine the series of power board that was removed and the series of power board to be installed.

- If the power board removed and the power board to be installed are the same type, begin with step 1 below.
- If the power board removed is of the previous series and the power board to be installed is of the current series, begin with step 6 below.

Power board removed and power board to be installed are the same type

To install the power board, with the drive controller door open:

1. Place the power board into the hinged assembly and align the holes with the seven mounting pins. Snap the board onto the mounting pins.
2. Using a torque wrench and a hex key attachment, tighten the ground screw at the top right corner of the power board to 17.7 lb-in (2.0 N•m).
3. Install the cables at connector jacks J3, J4, J5, J9, and J18 (or J32) on the new power board. Refer to Figures 5 or 6 for connector jack locations.

   Before installing J3, J4, and J5, make sure that the cable clasps are in the release position. If the power board being installed is of the previous series (see Figure 5), refer to Figure 4 on page 3 for cable clasp operation. Set the cables so that the silver leads are facing towards the top of the power board and are seated firmly against the bottom of the connector jacks. Push the cable clasps to their secure position.
   NOTE: P3 is a seven-wire cable, P4 is a six-wire cable, and P5 is an 18-wire cable.

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4. Install the connections at jacks J1, J2, J6, J7, J8, J10, J11, J12, J13, and J15 on the power board. Refer to Figures 5 and 6 on page 4 for connector jack locations. *When installing the connection at J11, align the connector sockets with the pins on the power board.*
5. **Proceed to step 13.**

Power board removed is of the previous series and power board to be installed is of the current series

6. Place the power board into the hinged assembly and align the holes with the seven mounting pins. Snap the board onto the mounting pins.
7. Using a torque wrench and a hex key attachment, tighten the ground screw at the top right corner of the power board to 17.7 lb-in (2.0 N•m).
8. Install the cables at connector jacks J3, J4, J5, J9, and J32 on the new power board. Refer to Figure 6 on page 4 for connector jack locations.

   Before installing the connections at J3, J4, and J5, set the gray cable clasps to the release position. Position the ribbon cables so that the silver leads are facing towards the top of the power board, and are firmly seated against the bottom of the connector jacks. Push the cable clasps to their secure position. *NOTE: P3 is a seven-wire cable, P4 is a six-wire cable, and P5 is an 18-wire cable.*
9. Install the connections at jacks J1, J2, J7, J8, J10, J11, J12, and J13 on the power board. Refer to Figure 6 for connector jack locations. *When installing the connection at J11, align the connector sockets with the pins on the power board.*
10. Install the connection to the J15 connector jack on the right side of the board. Refer to Figure 6. Wire-tie cable P15 to the control basket mounting frame.
11. Mate the enclosed adapter cable 52021-179-50 to the existing P6 cable, ensuring a good connection. See Figure 7. Using needle-nose pliers, install the other end of the adapter cable into the J6 connector jack at the bottom edge of the power board. See Figure 6. Wire-tie the adapter cable to the existing cable harnesses terminated at connector jacks J7 and J8.
12. **Proceed to step 13.**

13. Rotate the plastic shield back into position over the power board. Using a hex key wrench, install and tighten the three plastic guard mounting screws.
14. Swing the hinged assembly back to the left. Using a flat-blade screwdriver, tighten the two screws.
15. Install the control basket as described in the procedure on page 240 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96).

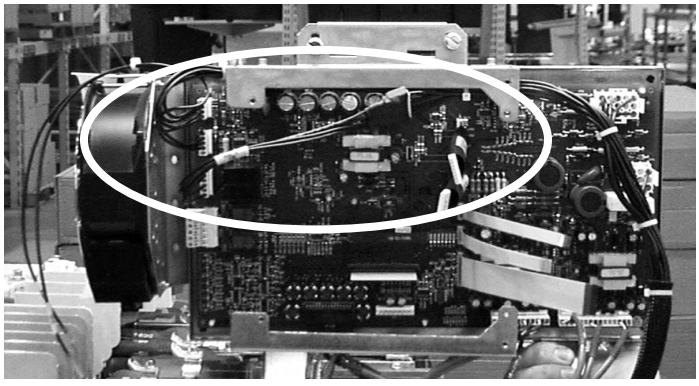

Figure 7: Installation

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PROCEDURE 2

This procedure explains how to replace the power board for drive controllers of the type illustrated in Figure 2 on page 2.

Removing the Power Board

NOTE: When removing connector plugs in this procedure, be sure to pull on the body of the plugs and not the wires.

⚠ DANGER

HAZARDOUS VOLTAGE

- Turn off all power supplying this equipment before working on it.
- Follow "PROCEDURE 1: BUS VOLTAGE MEASUREMENT " on page 310 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96).

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARDOUS VOLTAGE—SEPARATE POWER

- Separate power may be present on control basket, power board, and I/O Extension Module (if installed) connectors.
- Verify that all power has been removed from J1, J12, J13 connectors.
- If the I/O Extension Module is installed, verify that all power is removed from J22, J23, and J24 connectors.

Failure to follow these instructions will result in death or serious injury.

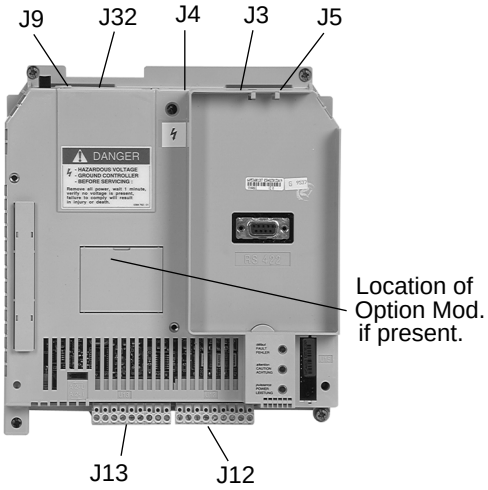

Figure 8: Main Control Board Connections

CAUTION

STATIC-SENSITIVE COMPONENTS

Many drive controller components may be damaged by static electricity. Follow the electrostatic precautions listed in "Static Sensitive Components" on page 4 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96), when handling drive controller circuit boards or testing components.

Failure to observe this instruction can result in equipment damage.

Read "WORK PRACTICE PRECAUTIONS" on pages 3-5 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96), and the precaution statement on the inside cover of that manual before performing any maintenance or troubleshooting procedure.

The tools needed for this procedure are:

- 4 in. needle-nose pliers
- A set of magnetized, flat-blade screwdrivers
- Metric hex key set, 2 to 14 mm

To remove the power board, with the drive controller door open:

1. First remove all connections from the main control board and the option module, if present, as follows (see Figure 8 for location of connections):
   a. If an I/O Extension Module is installed, remove the J22, J23, and J24 connectors. Do not remove the field wiring from the connectors. Refer to User's Manual VD0C06T306_ for location of connections.
   b. Using a flat-blade screwdriver, carefully loosen and disconnect the J12 and J13 connectors at the bottom of the control basket. Do not remove the field wiring from the connectors.

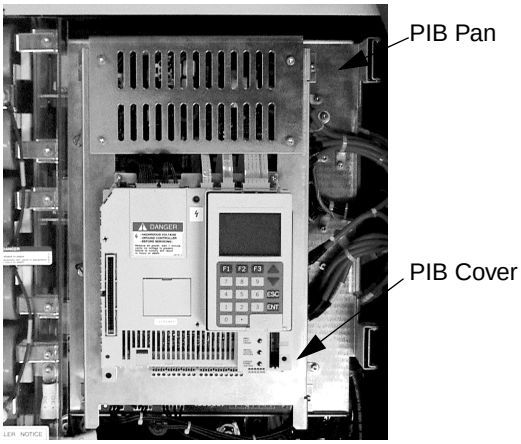

Figure 9: PIB Cover

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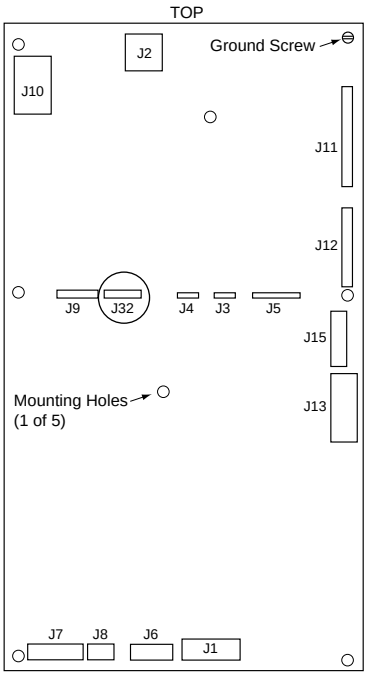

Figure 10: Power Board Connections

c. Using a flat-blade screwdriver, carefully loosen and disconnect the J9 and J32 connector plugs at the top left of the control basket.

d. Using two flat-blade screwdrivers, carefully pull out on each side of the cable clasp of J3, J4, and J5 to the release position. Refer to Figure 122 on page 239 of the VD0C06S701 (12/96) Service & Troubleshooting Manual for cable clasp operation. Make sure that the clasps are in their released position before removing the ribbon cable.

2. Using a 3-mm hex key wrench, loosen the four screws securing the PIB cover to the PIB pan and remove the cover. See Figure 9.
3. Remove the connections from the power board as follows (see Figure 10 for location of connections).

   a. Using needle-nose pliers, carefully remove the connections at J7, J8, and J6 at the bottom of the power board.

   b. Using a flat-blade screwdriver, carefully loosen and disconnect the J1 terminal block.

   c. Using needle-nose pliers, carefully remove the connector plugs at J11, J12, and J15 on the right side of the power board.

   d. With your fingers, carefully loosen and remove the connection at J13 on the right side of the power board.

   e. Remove the connectors at J10 and J2 on the top of the board by squeezing the release tabs at the side of the connectors, then pulling the connectors off of the board.

   f. Loosen and disconnect the P9 and P32 connector plugs from the power board.

   g. To remove the cables at J4, J3, and J5, carefully lift the gray cable clasp to its release position then remove the ribbon cable. *NOTE: when the clasp is in the release position, the cable will pull out freely.* If the cables are damaged, order the replacement cable kit, catalog number VZ3N616.
4. Using a 3-mm hex key wrench, loosen and remove the three screws on the right side of the power board.
5. Using needle-nose pliers, carefully unsnap the five mounting pins (see Figure 10) and lift the power board out of the controller.

Installing the Power Board

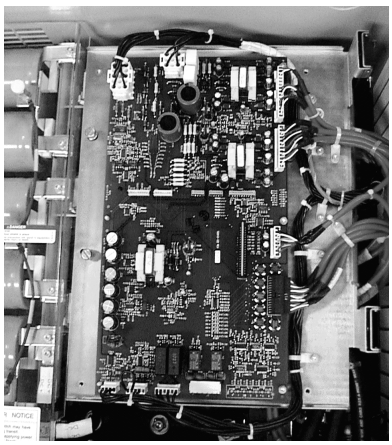

Figure 11: Power Board

CAUTION

STATIC-SENSITIVE COMPONENTS

Many drive controller components may be damaged by static electricity. Follow the electrostatic precautions listed in “Static Sensitive Components” on page 4 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96), when handling drive controller circuit boards or testing components.

Failure to observe this instruction can result in equipment damage.

Read “WORK PRACTICE PRECAUTIONS” on pages 3-5 of the ATV66 Service & Troubleshooting Manual, bulletin number VD0C06S701 (12/96), and the precaution statement on the inside cover of that manual before performing any maintenance or troubleshooting procedure.

The user needs the following tools for this procedure:

- Torque wrench, set to 17.7 lb-in (2.0 N•m)
- Metric hex key sockets for torque wrench, 2 to 14 mm
- 4 in. needle-nose pliers

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To install power board with the drive controller door open, follow these steps:

1. Place the board down into the drive controller and align the mounting holes with the five mounting pins. See Figure 10 on page 7. Snap the board onto the mounting pins.
2. Using a torque wrench with a 3-mm hex key attachment, tighten the three screws on the right side of the board to 17.7 lb-in (2.0 N•m).
3. Install the power board connections as follows (see Figure 10 for location of connections):
   a. Install the connections at J3, J4, J5, J9, and J32 on the new power board. Refer to Figure 10 for the location of the connections. Before installing the connections at J3, J4, and J5, set the gray cable clasps to the release position. Position the ribbon cables so that the silver leads are facing towards the top of the power board, and are firmly seated against the bottom of the connector jacks. Push the cable clasps to their secure position. *NOTE: P3 is a seven-wire cable, P4 is a six-wire cable, and P5 is an 18-wire cable.*
   b. Carefully install the connections at J7, J8, and J6 at the bottom of the power board.
   c. Connect the J1 terminal block.
   d. Carefully install the connections at J11, J12, J13, and J15 on the right side of the power board. *When installing the connection at J11, align the connector sockets with the pins on the power board.*
   e. Install the connections at J10 and J2 at the top of the power board.
4. Install the PIB cover. Thread the J3, J4, J5, P9, and P32 cables through the slot in the cover. Make sure that the tabs on the mounting brackets of the cover fit through the slots at the bottom of the PIB pan. Using a torque wrench with a 3-mm hex key attachment, install the four cover-mounting screws and torque to 17.7 lb-in (2.0 N•m).
5. Reinstall all connections to the main control board and the option module, if present, as follows (see Figure 8 on page 6 for location of connections):
   a. Connect the P9 and P32 connector plugs at the top left of the control basket.
   b. Install the ribbon cables into the J3, J4, and J5 jacks. Make sure that the clasp is in the released position before installing the ribbon cable. Refer to Figure 122 on page 239 of the VD0C06S701 12/96 Service & Troubleshooting Manual for cable clasp operation. Before engaging the clasps, position the cables with the silver leads facing outwards from the controller, and seat firmly against the bottom of the jacks.
   c. Connect the J12 and J13 connectors at the bottom of the control basket.
   d. If an I/O Extension Module is installed, install the J22, J23, and J24 connectors. Refer to User's Manual VD0C06T306_ to locate connections.

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